

PERSPECTIVES ON KNOWLEDGE MANAGEMENT

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Information Revolution: Information Management to Knowledge Management

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Every few years, a new technological development or management philosophy captures the attention of many strategic thinkers in organizations. The last couple of years have seen a surge of interest in knowledge management and the Internet. Drucker is credited with coining the term *knowledge worker* back in the 1950s. He was writing about the role of knowledge in organizations in some depth in the 1980s, as were many other foresighted writers such as Masuda (1980) and Sveiby (1987). Even after articles in more widely read publications in the early 1990s, most notably by Nonaka (1991) and Stewart (1991), there was no widespread interest among business managers until just a year or so ago. Now, the number of conferences on this theme is exploding, and there is at least one substantive new book published on this topic every month.

Likewise, the Internet has been evolving steadily for over two decades since its origins in the U.S. ARPANET project in the 1960s. The interest in knowledge as a strategic lever in business is not new. In the 1970s and 1980s, there were great expectations that knowledge-based computer systems (expert systems) could harness knowledge to solve many business problems. That promise was only partially fulfilled and certainly not to the extent that workers in the field had hoped. In retrospect, the problem was that developers focused too much on what has been

described as “falling into the trap of trying to develop ‘thinking machines’ rather than using machines to augment human thinking” (Skyrme 1991, 9–15).

Basically, there are four types of knowledge:

1. Tacit-to-tacit (socialization)—where individuals acquire new knowledge directly from others;
2. Tacit-to-explicit (externalization)—the articulation of knowledge into tangible form through dialogue;
3. Explicit-to-explicit (combination)—combining different forms of explicit knowledge, such as that in documents or on databases;
4. Explicit-to-tacit (internalization)—such as learning by doing, where individuals internalize knowledge from documents into their own body of experience.

The features of knowledge-based business are below:

- The more you use knowledge-based offerings, the smarter you get.
- Knowledge-based products and services adjust to changing circumstances.
- Knowledge-based businesses can customize their offerings.
- Knowledge-based products and services have relatively short life cycles.
- Knowledge-based businesses enable customers to act in real time

Throughout industry, there are examples of where individuals or departments are ostensibly carrying out the same process but where the performance levels are quite different. Often it is the tacit knowledge of the experienced person that makes the difference. The sharing of best practices from one part of an organization to another is therefore a key component of many knowledge management programs.

The value of knowledge as manifest in an organization's products, its intellectual capital (such as patents and licenses), people (human capital), and processes (structural capital) is very

evident when the book value of a company, as measured by traditional accounting methods, is compared with its market value, which takes into account the marketplace perception of intangible value not measured by accountants. The net result is that as the value and contribution of knowledge becomes more evident, the organizations are investing in initiatives to manage and harness that knowledge. This means a systematic approach to managing the processes for creating and capturing it, classifying and storing it, and disseminating and using it.

The following are the common activities taking place in knowledge management initiatives:

- Creation of knowledge teams: People from all disciplines develop the methods of knowledge management.
- Sharing of best practices: This occurs from one part of the organization to another, through databases, and through personal interaction and sharing events.
- Development of knowledge databases: These should include best practices, expert directories, market intelligence, etc.
- Creation of knowledge centers: Knowledge centers are focal points for the development of knowledge skills, managing and enhancing knowledge databases, and facilitating knowledge flow.
- Collaborative technologies: This is the use of intranets (internal Internet) or groupware for rapid information access.
- Intellectual capital teams: They identify and audit intangible assets such as knowledge.

In other words, the knowledge movement is to get the right knowledge at the right place at the right time. If this is done expeditiously, customer service can be improved through solving problems better, new products brought to market quicker, business processes continually improved, and innovative new ideas brought to commercialization. What many practitioners have found is that it is the flow of knowledge that is important. This is where networked computer and communications technology plays an important role.

The Internet (R)evolution

One of the most widespread ways in which technology supports knowledge processes is not through simple point solutions, such as expert systems or group decision support systems, but through enterprise-wide information and knowledge sharing infrastructures. Groupware conferencing systems like Lotus Notes and intranets were very evident. The evolving role of information technology is seen in figure 16.1.

If one traces the evolution of the contribution of information and communications technologies (ICT) in the workplace, the focus has changed over time. In the 1960s and 1970s, the focus was on automating procedures, commonly known as data processing at the time. During the 1980s, the leading edge was moving toward communications, most notably through electronic mail. At this time, online access to information through networks was also growing appreciably.

The most profound impact on knowledge management is that of the Internet and related technologies. It is more appropriate to call it an evolution, since its use has been growing exponentially for many years. From a knowledge perspective, the

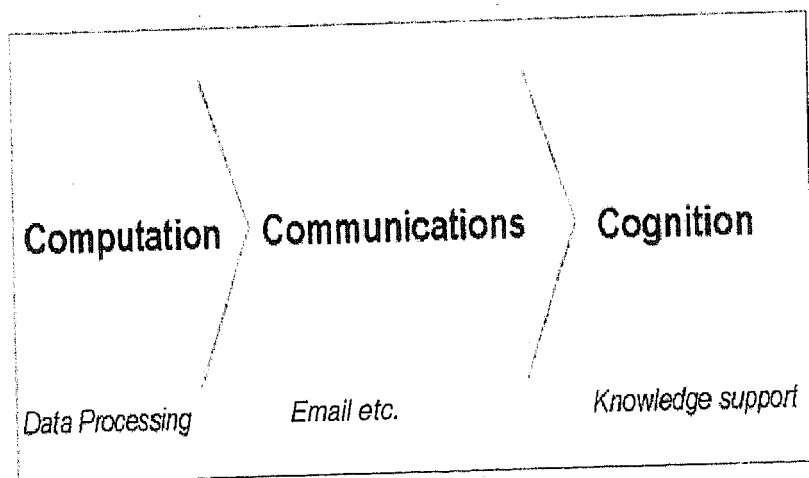


Figure 16.1. The evolving role of information technology

Internet has several characteristics that our research found was exploited in various knowledge programs:

- It uses a communications standard protocol (TCP/IP) that is widely supported—this means that it is universally accessible from many locations and through many different computer platforms.
- End-user software, such as electronic mail and World Wide Web browsers, are universally available and are low cost (and often free.)—this makes it cost effective to implement on an enterprise-wide basis.
- Internet access is widely available throughout the world, increasingly with international providers—it is a better option than building an in-house corporate network.
- The World Wide Web provides a quick means of publishing information that can be shared on a worldwide basis: “every user is also a publisher”—this universal repository of information means that information resources can be updated and widely shared at an attractive cost.

Internet vs. Online

The Internet is an incredible information source that has brought information directly to the end-users without involving an intermediary such as a librarian or information professional. Furthermore, technology developments on the Internet will really improve matters in the near future like including more intelligent search engines and intelligent software agents that roam the Internet and bring back relevant information to a desktop. This poses challenges for online providers and information professional alike. How can we serve the end-user better? How should we meet the opportunities and the challenge of the Internet? The world of online services and the Internet are already converging. Users want the best of both worlds—the accessibility, universality, ease-of-use, and low cost of the Internet combined with structured, organized, and (in some cases) the exclusive information of online services.

Intranets

It is the ease of use that has made Internet technology, such as browsers and search engines, of interest to companies wanting to share information. The advantages in a corporate setting of using intranets (internal Internets) are similar to those that make use of the Internet attractive in external information access and communications. End-users are familiar with browser interfaces, information can be shared across different local area networks and computer platforms, and published information is instantly available over the whole network. Increasingly, intranets are also hosting transaction and database applications with the web browser being the universal interface to different back-end systems.

Thus, an intranet can connect everyone with everyone else and can facilitate sharing of institution information and, with Internet gateways, external information. As with the Internet, the issue of organizing and managing information becomes problematical. There is also the added tension within an organization of what is official information and what is informal.

Knowledge Work Support: The ICT Contribution

It has been found that information and communications technologies enhance knowledge processes and support knowledge workers in several ways:

- Ready access to organized information
- Better communications and interaction with fellow knowledge workers (either individually or in groups)
- Access to personal knowledge support tools (such as cognitive mapping tools)
- Use of specific point solutions (e.g., risk analysis in lending)
- Group decision support systems that facilitate decision-making processes.

These represent combinations of person-to-computer and person-to-person interaction. Access to relevant information is not

just through information databases. It is common to have information screens that support business process applications.

Support for the Knowledge Value Chain

The number of ways in which computers support knowledge work is varied and makes planning for it quite difficult. One of the frameworks along a knowledge processing value chain is presented in figure 16.2.

First, computer support can make the input processes more effective. This means selecting information and knowledge that is relevant. Text summarizing, for example, extracts the key parts from a document so that the reader can gain most of the sense in only a fraction of the original. Data mining extracts new knowledge from existing data. It can find patterns that humans cannot, but it considers many more dimensions and variables.

In terms of the knowledge base, there is an increasing emphasis in adding some context to the information. This might be a fuller description of the application of the information, an indication of the quality of the source, and many other little human touches that are often not found in formal databases but that happen in day-to-day conversation.

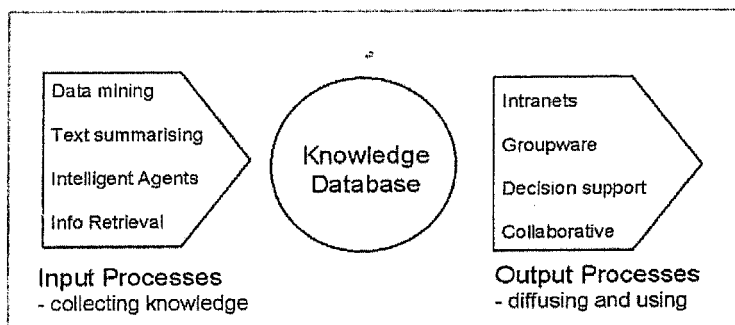


Figure 16.2. Computer support for knowledge processes

Implications for Information Professionals

The knowledge agenda and the growth of the Internet mean that there is an opportunity to elevate the skills developed over many years in handling information to a higher level and become active in the knowledge agenda. Certainly, the overall visibility of information professionals needs to be improved. On the one hand, the Internet makes information more readily accessible to the end-user, thus to some extent bypassing the need to get involved in mundane activities. On the other, it has created a heightened awareness of what information is available, yet tools such as search engines may not be effectively used. Users are facing the information paradox—"drowning in data, yet short of intelligence." The implications for information professionals are as follows:

- Articulate the added value that good information management can bring to the organization and its contribution to the bottom line.
- Develop closer partnerships with the knowledge champions in the organization. They need your skills, and you might benefit from their current popularity among senior management.
- Help the users help themselves. Provide more how-to guides so that they can make more effective use of the only information resources at their disposal, including the Internet/intranet as an information resource.
- Be an active Internet/intranet user yourself. Use e-mail as a primary means of communication. Work in discussion lists and have your own groupware areas, one for peer knowledge sharing of best practice and one for your client base.
- Seek out best practices, wherever they are. Benchmark your activities against a comparable activity externally as often as possible.

Conclusion

This article has drawn together two main strands of current management focus—the Internet and knowledge management. Each

has a momentum of its own. However, in combination, they provide a powerful driving force for business and individual opportunities. Of particular interest are the ways in which information professionals and online service providers can exploit this convergence.

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